

REMARKS

Favorable reconsideration, reexamination, and allowance of the present patent application are respectfully requested in view of the foregoing amendments and the following remarks. The foregoing amendments are fully supported by the specification, at least in paragraphs [0032] and [0045]. No new matter has been added.

Rejection under 35 U.S.C. § 103(a)

In the Office Action, beginning at page 3, Claims 1-3, 5, 7, and 14 were rejected under 35 U.S.C. § 103(a), as reciting subject matters that allegedly are obvious, and therefore allegedly unpatentable, over the disclosure of Murayama. Applicants respectfully request reconsideration of this rejection.

The rejection has been maintained largely on the basis of the assertion that the Murayama teaching that a solid composition containing inosine would motivate the person of ordinary skill in the art to prepare the claimed solid and amorphous inosine·L-arginine salt. The Office Action states that “one of ordinary skill in the art would have reasonably expected success in making these modifications because neutralizing an acid with an equimolar amount of a base and recovering the composition as a solid by the method described are routine procedures that are well within the ability of one of ordinary skill in the art.

There are several flaws in this reasoning, primarily that the solid and amorphous inosine·L-arginine salt of the claimed invention cannot be formulated by routine and ordinary experimentation, but only by the inventive method as disclosed by the Applicants. Claims 3 and 14 have been amended to clarify this method. Routine and ordinary experimentation would not result in the inosine·L-arginine salt of the present invention for the following reasons.

First, if one “formulates a solid composition comprising both inosine and arginine to be dissolved in water at a later date...” as asserted on the bottom of page 4 of the

Office Action, one does not formulate the solid and amorphous inosine·L-arginine salt of the present invention. Similarly, if one dissolves inosine and L-arginine in water, and then uses routine techniques to recover a solid composition, one does not recover the inosine·L-arginine salt of the claimed invention. The Office Action asserts on page 5 that “one of ordinary skill in the art would have recognized a solid composition of inosine and arginine as being a useful embodiment of the invention of Murayama.” However, a solid composition of inosine and arginine is NOT equivalent to the inosine·L-arginine salt of the claimed invention. Merely mixing inosine and arginine together, whether in a solid or aqueous composition, does not anticipate or even suggest the inosine·L-arginine salt of the claimed invention.

To the contrary, Applicants have discovered an unobvious method which results in the formation of an unobvious product with superior properties. In Murayama, the solid inosine is mixed with a binder or extender as a powder or granular preparation to enhance its solubility, as the solid form of inosine is known to be very difficult to dissolve in water. The claimed invention is an inosine·L-arginine salt, and which is in a homogeneous state at the molecular level, i.e. an amorphous solid. Such a formulation is easily dissolved in water, without the use of extender or binders. The formulation of such a salt is not routine or obvious, and the surprising result of the salt which is easily dissolved in water is unobvious over Murayama.

As stated above, the solid form of inosine taught by Murayama only teaches inosine alone or with a proper binder or extender. The aqueous solution containing inosine is taught to also contain an inorganic alkali or a basic amino acid such as arginine, but no solids are disclosed or suggested of inosine with an alkaline moiety. The only solid disclosed, or even suggested in the reference is a mixture of inosine and an extender or binder. Furthermore, the aqueous inosine solution and the solid powder containing the binder/extender taught by the reference are suggested as being useful for application to plants. Therefore, there is no suggestion to apply a solid matter obtained

from the aqueous solution to a plant.

Murayama does indeed disclose an aqueous alkaline solution of inosine with an alkaline moiety, which may be arginine, but no crystalline compounds of inosine with alkaline moieties are disclosed or suggested. Furthermore, no amorphous solid compounds of inosine with an alkaline moiety are disclosed or suggested. It should also be noted that there is no motivation to use a basic amino acid to attempt to form a crystalline inosine salt since typically formation of salts with such amino acids is difficult and not usually successful. This is due to inosine's poor solubility, even when mixed in an alkaline solution, the inosine typically precipitates out of solution prior to formation of any salt. Therefore, the skilled art worker would not have had an expectation of success in formation of such a salt.

Surprisingly, Applicants have overcome this problem with their inventive method, and the inventive resultant product. In conclusion, if one of skill in the art were to routine methods to isolate inosine and arginine from the aqueous solution as suggested by the Examiner, one would not obtain inosine·L-arginine salt of the claimed invention. It is only Applicants claimed method, which has been amended for greater clarity, which will result in the inventive inosine·L-arginine salt. Inosine forms the salt form with arginine only under very particular conditions, which have been elucidated by Applicants, and such is not routine nor obvious to the person of skill in the art based upon the disclosure of Murayama.

For at least the foregoing reasons, Applicants respectfully submit that the subject matters of Claims 1-3, 5, 7, and 14, each taken as a whole, would not have been obvious to one of ordinary skill in the art at the time of Applicant's invention, are therefore not unpatentable under 35 U.S.C. § 103(a), and therefore respectfully request withdrawal of the rejection thereof under 35 U.S.C. § 103(a).

Conclusion

For at least the foregoing reasons, Applicant respectfully submits that the present patent application is in condition for allowance. An early indication of the allowability of the present patent application is therefore respectfully solicited.

If Examiner Olson believes that a telephone conference with the undersigned would expedite passage of the present patent application to issue, he is invited to call on the number below.

It is not believed that extensions of time are required, beyond those that may otherwise be provided for in accompanying documents. However, if additional extensions of time are necessary to prevent abandonment of this application, then such extensions of time are hereby petitioned under 37 C.F.R. § 1.136(a), and the Commissioner is hereby authorized to charge fees necessitated by this paper, and to credit all refunds and overpayments, to our Deposit Account 50-2821.

Respectfully submitted,

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